

#### CHECK IT OUT!

Learn what the new Division Chief thinks about **FLOOD MANAGEMENT** on page 5

Curious about **FLOOD FORECASTING**? see page 8

What makes an **IDEAL NFIP COMMUNITY**? see p. 10

Do **YOU** have a personal **FAMILY DISASTER PLAN**? Here's how to put one together, and why, on p. 14

Golden State

# FLOODLIGHT



California Floodplain Management Newsletter  
A publication of the Department of Water Resources

# SAFCA

## Making Sacramento Safer

*By Maggie Franklin, Public Information Officer,  
Sacramento Area Flood Control Agency*

The 1986 flood — the flood of record on the American River — was the wake-up call for Sacramento. In the aftermath of that storm, the Corps of Engineers concluded that the Natomas and North Sacramento Area levees only provided flood protection at a level of about a 40-year flood. Updated hydrology for the American River watershed revealed that Folsom Dam (the only flood control dam on that river) was capable of controlling about a 70-year storm. Approximately 100,000 homeowners with federally backed mortgages suddenly found that they were in a regulatory floodplain with mandatory flood insurance. A moratorium was enacted prohibiting new development in the Natomas basin. Local leaders, recognizing the need for a single policy body to address the flood threat, formed a joint powers agency, and in 1989, the California Legislature formally empowered the Sacramento Area Flood Control Agency (SAFCA).

Since its formation, SAFCA has worked with the U.S. Army Corps of Engineers (Corps) and the State Reclamation Board to devise and implement a plan of flood control improvements that would provide Sacramento with at least a 200-year level of flood protection. These efforts are guided by the following objectives:

- Assure the structural integrity in the existing flood control system
- Provide long-term, high-level flood protection (200-year or greater) to the Sacramento region
- Temporarily increase the space available for flood control in Folsom Reservoir and make other improvements necessary so as to provide at least a 100-year level of protection.

In 1992, the Corps, the Reclamation Board and SAFCA sought congressional authorization of a dam at Auburn. Congress did not approve



Photo image provided by Maggie Franklin, SAFCA: "Emergency repairs prevented a failure at the east levee of the Sacramento River, February 1986."

that project, and SAFCA and its state and federal partners embarked on an incremental strategy. While much remains to be done, the following projects have been authorized and have been or will be implemented:

- Thirty miles of the east levee of the Sacramento River has been strengthened.
- SAFCA and the Bureau of Reclamation entered into an agreement whereby Folsom Dam is operated to take advantage of incidental flood control space provided by upstream nonfederal water and power reservoirs. Under the agreement, the effective flood control space in Folsom has been increased by 50 percent.
- SAFCA has nearly completed an \$80 million locally funded project to raise and strengthen levees protecting Natomas and North Sacramento from high water levels in the American River and the resulting backwater effects on local streams.
- Through a multi-objective collaborative effort, bank protection has been completed at five sites along the lower American River.
- The American River component of a \$120 million federally funded Common Elements project is nearing completion. This project involves the insertion of a slurry wall in the center of approximately 19 miles of the existing north and south levees on the American River. [Editor's note: See last issue, Vol. 14/Issue 1, of the Golden State Floodlight for article entitled "American River Slurry Walls".] Additionally, the project will raise and strengthen about ten miles of the Sacramento River levee along the Garden Highway in Natomas. It is anticipated that this project will be completed by the fall of 2003.

In 1999, Congress authorized an additional \$230 million in improvements. Included were enlarging outlets at Folsom Dam, additional improvements on the American and Sacramento River levees and improvements to levees protecting south Sacramento from high water in local streams tributary to the Cosumnes - Mokelumne Watershed. Last summer, Sacramento property owners registered their overwhelming support of this project when they approved an assessment to fund the local share by a margin of 82 percent of the votes cast. When all of these projects are completed, all sections of the Sacramento area will have at least 140-year flood protection.

"Even though the 1986 wake-up call came 15 years ago, I think this is an incredible achievement," commented SAFCA's Executive Director Butch Hodgkins. "Given the technical, political and environmental hurdles associated with major water projects in California, you have to put a great amount of effort into multi-objective projects. And, we are not done yet. We are working with the State and the Corps to use the operational flexibility provided by new outlets at Folsom to incorporate long-range weather forecasting into flood operations, and we believe it is feasible to raise Folsom Dam to provide additional flood control storage."

According to Director Hodgkins, the long-term goal is to provide a greater than 200-year flood protection for the Sacramento region. "We are on the road to accomplishing this goal, and we can see the end of the road across the desert. We will get there although it may take another ten years."

SAFCA and the Reclamation Board expect to pick a locally preferred plan for achieving that goal this fall.

*Note: For questions or more information about this article, please contact Ms. Franklin by e-mail at [franklinma@saccounty.net](mailto:franklinma@saccounty.net), or phone 916-874-4582.*

The Golden State Floodlight, the State of California's Floodplain Management newsletter, is a publication of the Department of Water Resources; editing & layout, by Antoinette Ostoya Daniel; masthead & lead story graphic, by DWR Graphic Design. Material for publication is solicited from federal, state, regional and local entities whose work is relevant to floodplain management issues.

The purpose of this newsletter is to assist local communities in managing their floodplains and in meeting the Federal Emergency Management Agency requirements under the National Flood Insurance Program. This free publication is supported under a cooperative agreement with FEMA.

Readers are encouraged to submit reports or draft articles about their experiences with the administration and management of floodplains, the effects or prevention of floods, flooding and cleanup, public education or outreach efforts, or in related fields such as wetlands, storm water management, etc. Relevant photos, black & white or color, are especially welcome. Text or photos will not be returned unless specifically requested. Address material for publication to **Ricardo Pineda** or **Maria Lorenzo-Lee**, DWR, 1416 Ninth Street, Room 1623, Sacramento, CA 95814; FAX 916-653-3639.

Copies of the Floodlight are available to schools, libraries and interested individuals, as well as local community officials, professional floodplain managers and staff, and professionals in various related fields as wetlands, the environment, water engineering, etc. To add new names and addresses, change or correct mailing labels, or for additional copies to the same location, please contact Maria Lorenzo-Lee by e-mail to [mlorenzo@water.ca.gov](mailto:mlorenzo@water.ca.gov) or at the address above.

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# My View of Flood Management

*by Stein Buer, Chief,  
Division of Flood Management*

When floods hit, the news media features dramatic rooftop rescues of stranded homeowners, forlorn cattle up to their necks in water, flooded streets, and breached levees. When floods hit, the Division of Flood Management goes into high gear to utilize its broad range of emergency response actions. Flood forecasts are issued, flood center operations are activated, levee patrols are dispatched, levee repairs are instigated, field command centers are opened, flood fight supplies are mobilized, high-water data is collected, and pumping, reservoir and weir operations are authorized. The Division works closely with a multitude of federal, state, and local agencies under the Standard Emergency Management System to conduct well-coordinated flood fights.

Although such immediate and effective flood response action is important to the public welfare, it is easy to overlook that the first and most cost effective defense against floods is to stay out of the flood path in the first place. And that is exactly what Floodplain Management programs seek to accomplish. Floodplain management programs work through public education programs, floodplain mapping, support for the National Flood Insurance Program, and through development of a better scientific understanding of flood hazards. Floodplain

management programs seek to avoid the disastrous consequences of placing people, their homes, and their businesses in harm's way.

Our national experience with major flood events such as the Mississippi River Flood of 1993 and California's Flood of 1997 have forcefully reminded us of the need for, and wisdom of, proactive floodplain management. Structural flood control measures alone are not enough. The nonstructural approaches must have a high public priority and be included in the total mix of flood damage reduction measures.

But floods, while terrifying and disastrous in their intensity, generally don't last long and the effects are quickly forgotten. In particular, with California's Mediterranean climate, floodplains lie dry and inviting most months of the year. The level lands, good soils, and easy access beckon developers, home buyers, and aspiring businesses.

California's population is projected to grow by another 40 percent in the next 25 years, and 60 percent of that growth may take place in the Central Valley floodplains. To achieve wise floodplain management while accommodating California's anticipated growth will take all our effort, determination, cooperation, and innovation. I pledge my full support to this vital flood damage reduction effort.



*Andy Lee* 1938 - 2001

Andy, retired State Floodplain Management Coordinator, passed away Sunday morning, September 30, 2001 due to complications from double pneumonia. He is survived by his wife Josie, two sons Michael and Marques, and a daughter Marissa. For those who wish to, donations may be made in Andy's name to United Way, American Lung Association, American Heart Association, or Arcade Baptist Church. The next issue will cover Andy's contributions to Floodplain Management.

# **Sacramento and San Joaquin River Basins, Flood Control Comprehensive Study - an Update**

*by Mike Mirmazaheri*

The Comprehensive Study is a joint project being conducted by the State of California and the U.S. Army Corps of Engineers. Some 35 federal, State and consulting engineers and scientists are studying various aspects of the Sacramento and San Joaquin River Basins. Additional staff from the California Department of Water Resources, The Reclamation Board, the Corps' Hydrologic Engineering Center, and the consultant engineering and environmental firms have been assigned numerous tasks to help the Comprehensive Study Team in fulfilling its project responsibilities and completing the planning documentation. The goals of the study are to develop a comprehensive plan of action to improve flood protection within the two basins and to restore the existing and valuable ecological systems.

The January 1997 floods demonstrated that the Sacramento River Flood Control System should be improved. It also proved that the San Joaquin River Flood Control System is undersized and inadequate to provide the level of protection expected. The Governor's Flood Emergency Action Team report dated May 10, 1997 recommended State participation in a Comprehensive Study. Executive Order W-156-97 states: "It is the policy of the State to fully participate in feasibility studies of flood damage reduction projects in the Central Valley to ensure the full range of structural and nonstructural measures are considered." This feasibility study responds to the FEAT report recommendation by evaluating the entire flood control system of the Sacramento and San Joaquin River Basins, and by developing a comprehensive system-wide plan of action and a framework/strategy for flood damage reduction and ecosystem restoration. A joint Environmental Impact Statement/Report will discuss alternatives, evaluate

their impacts, and propose mitigation.

The comprehensive study will cover a four-year period, which began with the signing of the cost-sharing agreement in Spring 1998. An initial status report was developed in Spring 1999, with a feasibility report and environmental documentation to be completed by the end of the study period. Completion of the Record of Decision (EIS) and the Certification (EIR) are scheduled for late 2002.

The initial status report identified problems, opportunities, planning objectives, constraints, and measures to address the flood damage reduction and ecosystem restoration objectives. The final report will have implementation plans for long-range management of both entire river systems. The study will include formulation and evaluation of the full range of structural and nonstructural flood damage reduction alternatives and integrated environmental restoration measures, and will identify potential early implementation projects.

The plan is anticipated to include recommendations such as changes in existing reservoir operations, considerations of off-stream reservoirs, construction of setback levees, considerations for transitory storage to contain floodflows, and possible improvement in the existing conveyance system. The study includes the development of hydraulic models and maps showing potential inundation areas associated with various flood frequencies. Aerial photography and laser technology is being used to develop topographic maps for these areas so that nonstructural solutions can be evaluated and the full impacts of flooding from system failure can be assessed. It should be noted that the comprehensive plan is coordinated with all other ongoing flood protection and ecosystem restoration programs.

Hydrology is important to the effort. A hydrological study considers different storm cen-

ters and develops hydrographs for each basin and tributaries using HEC-1. It also evaluates re-operation of major reservoirs in both basins and studies the downstream impacts. The hydrographs are input to the UNET, an unsteady one-dimensional hydraulics model for routing flows in the confined channels. UNET calculates water surface elevations at defined index points and compares the results against the WSE assigned based on available geotechnical information on the existing levee foundation. This is defined as the likely failure point. Utilizing the FLO2D model, floodwater would inundate the land within the floodplain area once the WSE in the channel exceeds the WSE at the index point. FLO2D has the capability to define inundation area and calculates the depth of floodwater. The Study Team has worked very hard on producing potential inundation maps. Comments made by the Corps' Independent Technical Review group, and comments received at public outreach meetings are now being incorporated. The inundation maps should be finalized in the near future.

Results of the FLO2D model are also being used in economic analyses in order to assess potential damage associated with each flood event. A Flood Damage Assessment model, utilizing existing land use data, performs necessary economic analysis and calculates a benefit-cost ratio for the proposed project. This is the first time that UNET in conjunction with FLO2D provides data to FDA for economics assessment, thus helping the team to learn more about these types of performances. To make sure that our study is valid, a parallel analysis using HEC-RAS is also being performed. This study will calculate a WSE at each cross-section and determine flows accordingly. Calculated flows will be used to establish potential inundation areas and analyze economic impacts.

To help address the study's second objective of ecosystem restoration, an ecosystem analysis in both basins is being planned. A pilot project identifying impacts of flood flows on riparian habitat along a 13-mile stretch of

San Joaquin River was developed. The team is conducting analyses on sediment loading and the potential impacts of existing system on the natural geomorphic processes of erosion, deposition, and channel migration. The existing condition in the river system and its potential impacts on wetlands and riparian habitats will also be investigated. Existing modeling capabilities will assist the team to better understand where flows would be required to achieve anticipated ecosystem benefits.

Because this is a joint federal and State study, implementation of this project is dependent on congressional approval and funding for construction. The team has developed four concept plans to be utilized as a planning tool in formulating starting point plans and the program master plan. The underlined criteria for the master plan is to provide 50-year protection for agricultural land, 100-year protection for small communities and 200-year protection for major urban areas. The master plans are expected to be completed in Fall 2001. A draft feasibility report is scheduled for Spring 2002, and a Final feasibility or an EIS/EIR is anticipated to be ready in Fall 2002. Based on the current schedule, congressional considerations are anticipated in Fall 2003, and California Legislature action is expected in Winter 2003.

*List of acronyms used in article above -*

**FEAT:** Flood Emergency Action Team

**EIS:** Environmental Impact Statement

**EIR:** Environmental Impact Report

**UNET:** Unsteady Network Model

**HEC-RAS:** Hydrologic Engineering Center-River Analysis System

**FDA:** Flood Damage Assessment

**EFM:** Ecosystem Functions Model

**WSE:** Water Surface Elevation

**HEC 1:** Flood Hydrograph program used to model rainfall - runoff process.

**FLO2D:** A model that simulates flood flows for alluvial fans and urban floodplains.



# California State Flood Forecasting: Overview

*by Gary Bardini, Chief Forecaster and  
Mary Jimenez, Engineer, Water Resources*

The State of California Department of Water Resources, Division of Flood Management has a responsibility to provide timely and reliable flood forecasts on major rivers, mostly in northern and central California. The forecasting system is fueled by an extensive real-time data collection network in cooperation with many other agencies. The data is exchanged and managed through CDEC — the California Data Exchange Center. CDEC in turn, provides input data necessary to operate the streamflow forecasting models in the joint flood forecasting program in the National Weather Service's California-Nevada River Forecast Center (CNRFC). The results of the model runs are used to issue flood forecasts, warnings and other information on river, reservoir, flood and water conditions for local, State and federal agencies and the public. Forecasts and warnings are distributed by the State-Federal Flood Center and by various other networks.

## The California Data Exchange Center

Real-time data from remote data stations is collected via the State microwave network and GOES satellite system, then processed. Real-time data includes river stages, precipitation, snow water content, reservoir levels, temperature and water quality. Much data is collected directly by CDEC over the various radio telemetry systems; this is supplemented by data exchange with the following major contributors:

California Department of Water Resources (DWR)  
National Weather Service (NWS)  
U.S. Bureau of Reclamation (USBR)  
U.S. Army Corps of Engineers (USACE)  
U.S. Geological Survey (USGS)  
Pacific Gas and Electric Company  
Sacramento Municipal Utility District

CDEC's data exchange program involves the automated transfer and receipt of data and information via network connections. CDEC maintains and operates an extensive website that is accessed by private and public agencies, news media and the general public. The website (<http://cdec.water.ca.gov>) provides the ability to display data in various ways: graphs, pictures, photos, maps, tables, etc. The website is an important tool in monitoring current conditions during floods and disseminating flood warnings to emergency response agencies.

## Flood Forecasting

On a year-round basis, state and federal forecasting personnel operate rainfall-runoff models to produce river forecasts, flood warnings, and other information on river, reservoir inflow, flood and water conditions. During the flood season (October through April), the forecasting staff monitors the weather and river flows on a 24-hour basis for the major river systems in California. In partnership with the CNRFC, the forecasting staff prepares river stage and tide forecasts at 56 locations as frequently as required by changing flood conditions. Tide and flood forecast bulletins are posted on the CDEC website for agency and public access as they are produced.

## Flood Emergency Response

The goal of flood emergency response is to provide timely information on potential flood conditions in the form of flood forecasts and warnings. With this information, people can act to protect themselves and others and can avoid or minimize damage to property. As described in the previous section, environmental conditions are monitored and transmitted to the CDEC database and website. As the data is received, it is evaluated within minutes of the actual measurement and transmission. Results are reported rapidly to the decision makers and emergency responders who must act upon the information.



# ASFPM in Charlotte, NC

*by Maria Lorenzo-Lee*

ASFPM's 25th Conference was held June 4 through 8, 2001 in Charlotte, North Carolina. The conference theme, "Plan, Prepare, Protect — New Trends in Floodplain Management 2001", was well covered in a series of six plenary sessions, plus many small group presentations and break-out discussion sessions. Over 700 participants registered for the conference to take full advantage of technical, informational and social activities. A record number of exhibitors filled a large hall where they displayed aspects of floodplain management and innovations in applicable technology.

At a special luncheon, the 25 years of the Association of State Floodplain Managers' existence were reviewed, i.e., how ASFPM started, how it has grown and where it is headed. Each of the past ASFPM Chairpersons were introduced and honored, and highlights of their terms were shown. The Association's six major awards were made at the annual Awards luncheon. Most notable was the presentation of the group's highest award, The Goddard-White Award, to Jacquelyn (Jaci) L. Monday, a most deserving recipient. A PowerPoint presentation introduced and honored each of the past ASFPM Chairpersons, and gave highlights of their term of office. [Details of the awards and descriptions of the plenary and break-out sessions are available in the June 2001 issue of ASFPM's News and Views.]

The conference featured training workshops before and after the conference; administration of ASFPM's Certified Floodplain Manager examination twice; and local technical field

trips to view flood-sensitive capital improvement projects and floodplain buyout projects.

This conference was new to me and here are some of my impressions as a first-time attendee. The excellent technical program provided many educational benefits over a wide and varied choice of topics — making it difficult to choose which to attend. The participant lists and abstracts of presentations on a CD were helpful tools. The early morning round-table breakfasts proved to be excellent opportunities to exchange ideas and review progress of the ASFPM committees and regional groups.

Yet I also appreciate the time left in the program for family events and opportunities to get really acquainted with other attendees, such as "Sports Night" where everyone relaxed and had fun. The overall friendly atmosphere [and casual attire] helped to promote making new friends and renewing existing friendships. And there still was time for important side-bar meetings, a rare opportunity for key people to be together to exchange ideas and information and arrive at needed conclusions or courses of action.

The conference was well run and lived up to my expectations as the premier conference on FPM. I have concluded that it is most important to attend this annual conference because it provides a wealth of information and also offers lasting friendships with my peers.

## **Future Conferences:**

National Floodproofing Conference  
Tampa, Florida  
March 25-29, 2002

26th Annual Conference of ASFPM  
Phoenix, Arizona  
June 23-28, 2002

# An Ideal NFIP Community

by Bill Hom, Chief

Floodplain Assistance & Outreach Section  
Floodplain Management Branch

My vision of an ideal National Flood Insurance Program (NFIP) community looks like this:

- It has a floodplain management ordinance that meets the current NFIP regulations.
- It requires all new and substantially improved or damaged structures to be elevated at least two feet above the Base Flood Elevation (BFE).
- It keeps Elevation Certificates for all structures located in the Special Flood Hazard Areas (SFHA).
- Its Flood Insurance Rate Maps (FIRM) accurately reflect the local floodplain, and are well maintained.
- It is a Community Rating System (CRS) community.
- Its staff is dedicated to and proactive in its implementation of a sound floodplain management program.

To help make that picture-perfect community happen here, I offer the following suggestions to the 516 communities in California currently participating in the National Flood Insurance Program.

**Floodplain Management Ordinance:** The Floodplain Administrator should occasionally compare the community's floodplain management ordinance with the California Model Floodplain Management Ordinance for any changes, and update the community's ordinance, if necessary, to meet the current NFIP regulations. (The Model Ordinance can be downloaded from the Department of Water Resources/Division of Flood Management website at <http://www.fpm.water.ca.gov>).

**Building Permitting Procedures:** The Floodplain Administrator should prepare detailed procedures on when and how the community's floodplain management ordinance is enforced.

**Lowest Floor Elevation:** The Floodplain Administrator should insist that the lowest floor

of a new or substantially improved or damaged building located in a Special Flood Hazard Area be elevated two feet above the Base Flood Elevation.

**Elevation Certificate:** The Floodplain Administrator should collect and keep on file the elevation certificate of each building located in an SFHA with the "as-built" lowest floor elevation on the form (not the proposed elevation from the construction drawings). The Floodplain Administrator should also review the accuracy of data on the elevation certificate.

**Flood Insurance Study and Flood Insurance Rate Map:** Near the end of a Flood Insurance Study, the Floodplain Administrator should review the preliminary FIRM for accuracy. Also, the Floodplain Administrator needs to apply for a Letter of Map Revision within six months of the completion of a project that alters the SFHA.

**Structure and Floodway Violations:** If a structure or floodway violation has been identified, the Floodplain Administrator should take swift action to correct the problem.

**Community Rating System:** If the community is in full compliance with NFIP regulations, the Floodplain Administrator should request recognition under the CRS as a way to reduce the flood insurance premium that homeowners pay.

**NFIP Training Classes:** The Floodplain Administrator and staff members should attend the free training classes or workshops offered by FEMA and DWR to become familiar with the current NFIP regulations and requirements.

## The Payoff

If your Floodplain Administrator diligently practices these suggestions, then your community may easily become a full-compliance community and an elite CRS community. The payoff will be the money saved by community residents through lowered flood insurance premiums and by taxpayers at local, state and federal levels through the reduction of flood damage claims.

For questions or more information, contact Bill Hom at 916-653-6214 or [billh@water.ca.gov](mailto:billh@water.ca.gov).

## New Faces

**Stein Buer**, appointed last fall as Chief of the Division of Flood Management, initially joined the Department of Water Resources in



1981 to work with the Division of Flood Management. He participated in efforts to update Snow Surveys forecasting procedures, revise Oroville Lake flood control criteria, up-

date PMF studies for Project facilities, and other studies. In 1984 he joined the Flood Forecasting Section and served as Section Chief for 4 years.

In 1988 Stein transferred to the Division of Planning to manage the North Delta Program. During the next 8 years Stein directed the completion of a draft EIR/EIS for the North Delta Program, conducted the Georgiana

Slough Temporary Barrier Program, directed a wide range of technical studies, and managed the acquisition of Delta lands for various project purposes.

Stein joined the CALFED Bay-Delta Program in the fall of 1996, where he initially served as Chief of the Technical Services Branch with responsibility for CALFED's engineering and hydrologic studies. Subsequently, he served as Assistant Director and Program Implementation Coordinator.

Stein returned to the Division of Flood Management in January 2000, to serve as Chief of the Hydrology and Flood Operations Office. In November 2000 he was selected as Chief of the Division of Flood Management.

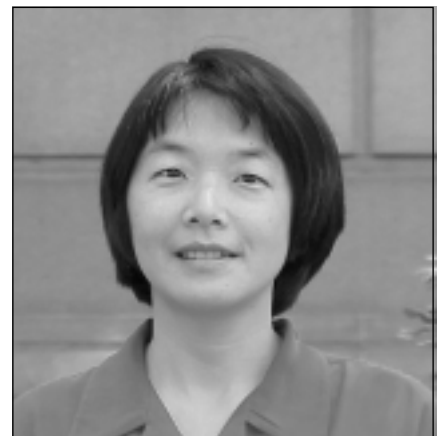
Stein holds a Bachelor of Science degree in Zoology and a Master of Science in Civil Engineering from U.C. Davis. His work experiences prior to joining the Department of Water Resources include snow hydrology research for USBR and U.C. Davis, water quality studies for the Regional Water Quality Control Board, and two years of civil engineering consulting.

**Grace Cheng** began work with DWR in February 2001 as an Engineer, W.R., in the Floodplain Management Branch, Floodplain Mapping and Technical Services Section. Her current assignments include hydrologic and hydraulic floodplain mapping studies and technical reviews, and working with the Districts and engineering consulting firms on implementing the state awareness floodplain mapping program.

Grace previously worked as a design engineer with two engineering consulting firms, PBS&J in Tampa, Florida and Stanley Consultants in Phoenix, Arizona. Her technical expertise is in the fields of hydrology and hydraulic modeling and analysis, floodplain

delineation and storm drainage design.

Grace received her B.S. in Civil Engineering from Tsing Hua University in Beijing, China, and her M.S. in Civil Engineering from the University of Maine in Orono, Maine. She enjoys outdoor activities such as hiking, skiing, rafting, and traveling.



**William E. “Bill” Elder**, a Senior Engineer, WR in DWR’s Southern District Office (Glendale) since May, has been a California Registered Professional Engineer/Civil since 1974, with a total of 38 years experience in



Water Resources Planning & Design, Highway Planning & Design, and Subdivision Planning & Design, in both the public and private sectors.

As project or senior engineer and team member on water resources projects, Bill has personally performed or directed others in hydrologic data collection and analysis, use of rainfall-runoff and hydraulic computer models, physical hydraulic model studies, sizing of channels, culverts, dam principal and emergency spillways, reservoir operations, and analysis of water supply and hydropower facilities. He has also

made and reviewed economic comparisons of cost to construct versus benefits received.

His broad experience in highway planning and design included development of project plans, specifications and cost estimates; oversight or performance of the setting of both horizontal and vertical alignments for projects ranging in size from major interchanges to rural country roads using AASTO and other standards; and use of earthwork and coordinate geometry computer models as well as performing utility, railroad, and public agency liaison.

While in subdivision engineering, Bill prepared tentative and final parcel/subdivision maps for submittal to reviewing agencies; served as project engineer/team leader for the design and preparation of grading, street, water, and sewer plans for subdivisions, parking lots, and recreational areas and also lead and directed survey parties to accomplish this work.

Bill’s education includes a Bachelor of Science, Civil Engineering, which he earned at California State University, Fresno in 1978 and a Master of Science, Engineering, in Water Resources Planning at the University of California, Davis, in 1980.

**Bunloeurng “Boone” Lek** graduated from U.C. Davis in Dec 1997 with a BS in Civil Engineering. For three years, he worked in the Aqueduct Protection and Flood Management Section of DWR’s San Joaquin District. While with the San Joaquin District, his assignment mainly involved surveying and hydraulic modeling for floodplain mapping studies for the Federal Emergency Management Agency’s National Flood Insurance Program.

On July 2, 2001, Boone transferred to FPM Headquarters in Sacramento, assigned to the Floodway Enforcement and Designated Floodways Section. He is primarily responsible for conducting floodplain mapping studies related to the Reclamation Board’s Designated Floodway Program and FEMA’s NFIP. He also participates in providing tech-

nical assistance to the proposed Governor’s Floodplain Management Task Force as a limited-term assignment.

Boone plans to take the Professional Engineering exam in October 2001. He has been married for over 3 years. His extra curricular activities include traveling, skiing and golfing. Boone’s technical expertise will be a valuable asset to the FPM Program.



**Garret Tam Sing** began work with DWR in April 1994 as an Engineer, Water Resources in the Southern District, where he worked for six years on flood subvention programs. In between DWR job assignments, he also had the opportunity to work under the direction of the Governor's Office of Emergency Services on several federally declared disasters caused by various winter storms and the Northridge Earthquake. Garret was also a "flood-fighter" during the February 1998 floods in Northern California. As of January 2001, he began work in the National Flood Insurance Program. Garret is pleased to be a part of this program and is enjoying visiting his assigned



communities and helping them meet their responsibilities under the NFIP.

Garret's background includes attending Loyola Marymount University where he earned a Bachelor of Science in Civil Engineering in 1991. During his personal recreation time, Garret belongs to a swim club and also manages to jog once or twice a week. His current career goals are to become more knowledgeable about the NFIP and have fun visiting the communities, i.e. make his community visits pleasant, helpful learning experiences for himself and those he visits and, for a future goal, continue to work in floodplain management.

## **2002 Workshop Training Schedule**

Tentative DWR Workshop Training course schedule dates for 2002 are listed below by the workshop course title in bold, followed by the individual Instructor's name and possible workshop dates.

### **Floodplain Management & Duties of the Local Administrator**

Ed Perez - February 26 or 28, 2002.

Kristen Kingsley - January 15, 16 or 17; March 26, 27 or 28; and June 4, 5 or 6, 2002

### **Community Rating System**

Ed Perez - March 11, 12 or 13; and June 12, 13 or 14, 2002.

Kristen Kingsley - July 23, 24 or 25; and August 6, 7 or 8, 2002.

### **Substantial Improvement, Substantial Damage & EMA Elevation Certificate**

Ed Perez - April 9, 10 or 11; and May 14, 15 or 16, 2002.

Kristen Kingsley - June 18, 19 or 20; July 9, 10 or 11; and August 13, 14 or 15, 2002.

When workshop dates **and locations** have been finalized, the details will be available on the Floodplain Management Web Home Page at [www.fpm.water.ca.gov](http://www.fpm.water.ca.gov).

# Why a Family Disaster Plan, and How to Develop one!

*by Chris Floyd, Disaster Services Director,  
Capital Area Chapter, American Red Cross*

Disaster can strike quickly and without warning. It can force you to evacuate your neighborhood or confine you to your home. Where will your family be when disaster strikes? They could be anywhere — at work, at school or in the car. How will you find each other? Will you know if your children (or elders) are safe?

Families can and do cope with disaster by preparing in advance and working together as a team. Knowing what to do is your best protection and your responsibility. The National Weather Service, the Federal Emergency Management Agency and the American Red Cross urge each and every family to develop a family disaster plan. The key to preparedness is having a plan. Here are the steps to follow to create and implement a family disaster plan:

- Gather information about hazards in your area by contacting your local chapter of the American Red Cross, your county emergency management office or the National Weather Service. Find out what types of disasters could occur in your area and how you should respond. Learn your community's warning signals and evacuation plans. Also, find out about the disaster plans at your workplace, your children's school and other places where each of your family members spend time.
- Meet with your family to create a plan. Discuss the information you have gathered and why it is important to prepare for disaster. Plan to share responsibilities and work together as a team.
- It is a good idea to pick two places to meet - right outside your home in case of a sudden emergency, like a fire; and outside your neighborhood in case you cannot return home. Every family member, including small children, should know their home address and phone number.
- Ask an out-of-state (or out of local and nearby areas) friend to be your "family con-

tact" for everyone to call if the family gets separated. After a disaster, it is often easier to call long distance.

- Have a plan for your pets — be aware that pets are not allowed in American Red Cross shelters. Other arrangements should be secured beforehand.

Once you have created a family disaster plan, it is time to implement the plan so that it may be activated at any point in time. Post emergency telephone numbers by phones (fire, police, ambulance, etc.). Teach your children how and when to call 911. Have your family learn basic safety measures, such as CPR and First Aid. Show each family member 1) how and when to turn off water, gas and electricity at the main switches, and 2) how to use a fire extinguisher. Conduct a home hazard hunt in which you inspect your home for items that can move, fall, break or cause a fire, and correct them. Stock emergency supplies and assemble a Disaster Supplies Kit (see below). Determine the best escape routes from your room and find the safe spots in your home for different types of disasters.

## Disaster Supplies Kit

Your kit should include enough supplies to meet your needs for at least three days. Store these supplies in sturdy, easy to carry, water-resistant containers, such as backpacks or duffle bags. It is a good idea to keep a smaller kit in the trunk of your car. Your disaster supplies kit should include:

- ✓ A three-day supply of water (one gallon per person per day) and food that will not spoil
- ✓ One change of clothing and footwear per person
- ✓ One blanket or sleeping bag per person
- ✓ A first aid kit, including prescription medicines
- ✓ Emergency tools, including a battery-powered radio, flashlight and plenty of extra batteries
- ✓ An extra set of car keys

- ✓ Cash
- ✓ Special items for infant, elderly or disabled family members
- ✓ An extra pair of glasses

Practice and maintain your plan. Ask questions to make sure your family remembers meeting places, phone numbers and safety rules. Conduct drills. You should replace stored water every three months and stored food every six months. Test and recharge your fire extinguisher according to manufacturer's instructions. Smoke alarms should be checked monthly and batteries changed at least once a year.

Something else to keep in mind is the value of neighbors during a difficult time. Working with neighbors can save lives. Why not meet with your neighbors to plan how the neighborhood could work together after a disaster until help arrives? If you are a member of a neighborhood organization, introduce disaster preparedness as a new activity. Know your neighbors special skills and consider how you could help neighbors who have special needs, such as disabled and elderly persons. Make plans for child care in case parents cannot get home - that way, all of the children in your neighborhood can be safe.

By becoming aware of possible disasters in your area and planning accordingly, your family is taking a giant step toward survival. By sharing this information with your neighborhood, you are helping other families prepare. For additional information on disaster planning and preparing or to become a Disaster Resistant Neighborhood, please contact an Area Chapter of the American Red Cross\*\* or visit our web site at [www.tallytown.com/redcross](http://www.tallytown.com/redcross).

\*\*In California, the Red Cross Area Chapter office phone numbers are:

Sacramento (Sacramento-Sierra Chapter),  
916-368-3131;

San Francisco (Bay Area Chapter),  
415-427-8000;

Los Angeles (Greater Los Angeles Chapter),  
213-739-5200; and

San Diego (San Diego Chapter),  
619-542-7400.

## California's Certified Floodplain Managers (as of July 2001)

**Ghelfi, Peter J.**, CFM, P.E., Sacramento

**Hunt, Randy**, CFM, Red Bluff

**Kingsley, Kristen Ann**, CFM, Red Bluff

**Lierly, Richard Charles**, Jr., CFM, Martinez

**Lindsay, Stephen**, CFM, San Diego

**Lyle, Scott R.**, CFM, P.E., Carlsbad

**\*Mermilliod, Mary Louise**, CFM, Riverside

**Owens, Bill**, CFM, Sacramento

**Parker, Michael John**, CFM, Santa Barbara

**Rojo, Rosalía**, CFM, Arcadia

**Schaefer, Kathleen Kay**, CFM, P.E., Point Richmond

**Smith, Carlos**, CFM, Sacramento

*\*Mary Louise Mermilliod is California's newest Certified Floodplain Manager. She passed the March 2001 exam at the Floodplain Management Association's Spring Conference in San Diego. Congratulations, Mary!*

### **The next CFM exams are:**

March or April 2002 in Southern California

Potential examinees can register (**at least 2 weeks before the exam date**) with ASFPM through their web site at [www.floods.org](http://www.floods.org) -- just click on Certification.

If you would like to have a CFM exam in your area, please contact Maria Lorenzo-Lee by e-mail at [mlorenzo@water.ca.gov](mailto:mlorenzo@water.ca.gov) or telephone her at 916-653-8693.



**The Golden State Floodlight**  
**CA Dept.of Water Resources**  
**Floodplain Management Branch**  
**1416 Ninth Street, Rm. 1623**  
**Sacramento CA 95814**

*Please, let us know when you are moving (or have already moved) & include the label ID number by e-mail to [mlorenzo@water.ca.gov](mailto:mlorenzo@water.ca.gov) or a copy of this label with your notice by mail to the address above. Thank You!*



## DWR Is Recruiting

The Department of Water Resources is continuously testing and recruiting for Civil Engineers and Environmental Specialists. Individuals with a degree in Civil Engineering, Environmental Sciences, or closely related fields, are encouraged to apply. Positions are available from the entry to journey level. There are excellent training, medical, dental and retirement benefits. For details about the positions available, contact Jenniffer Murray at 916-653-7959, e-mail [jmurr@water.ca.gov](mailto:jmurr@water.ca.gov).